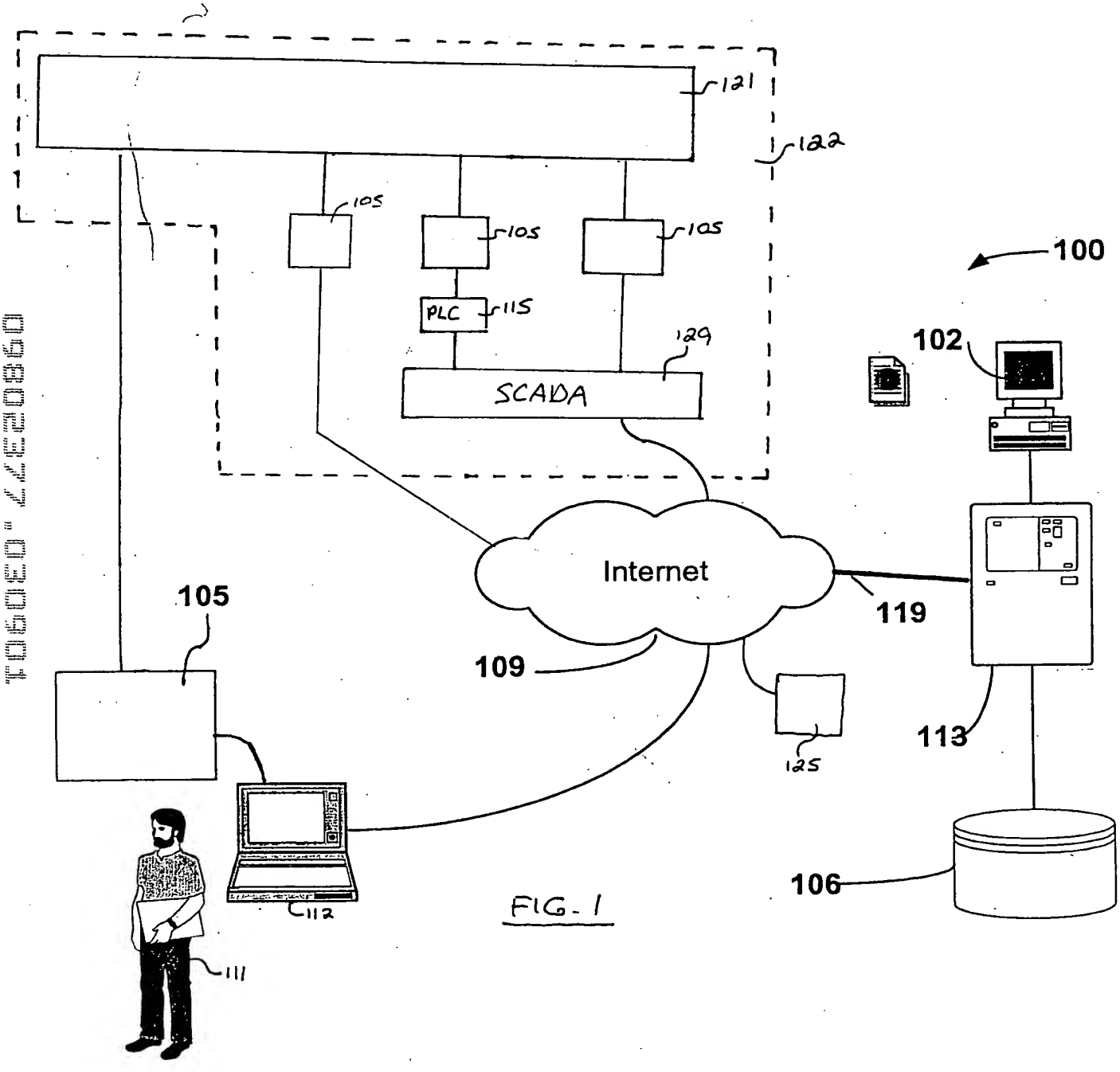
121
122
105
105
105
PLC
115
129
SCADA
100
102
Internet
119
105
109
113
125
106
112
111

FIG. 1

T06060"27E20860

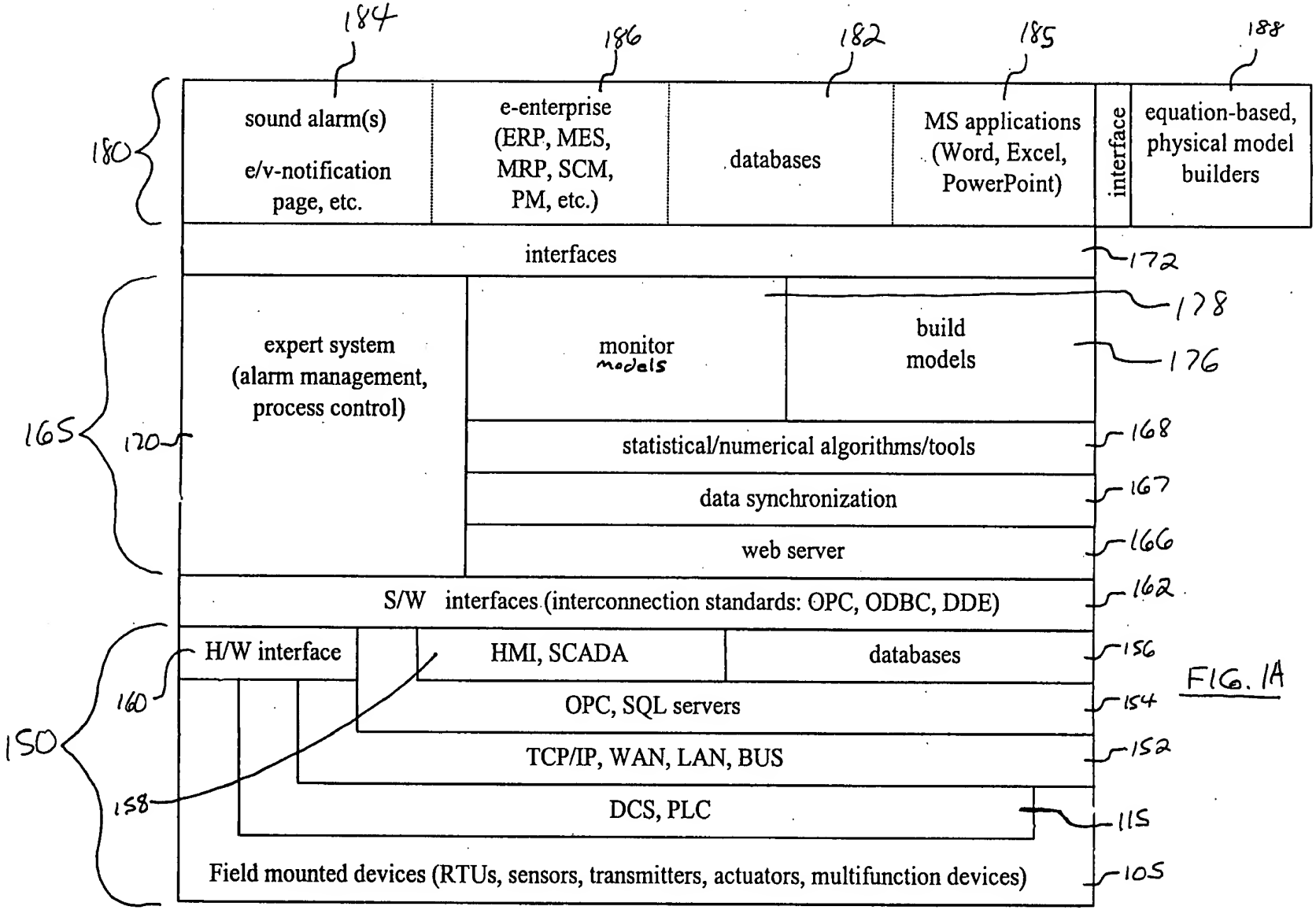

FIG. 1A

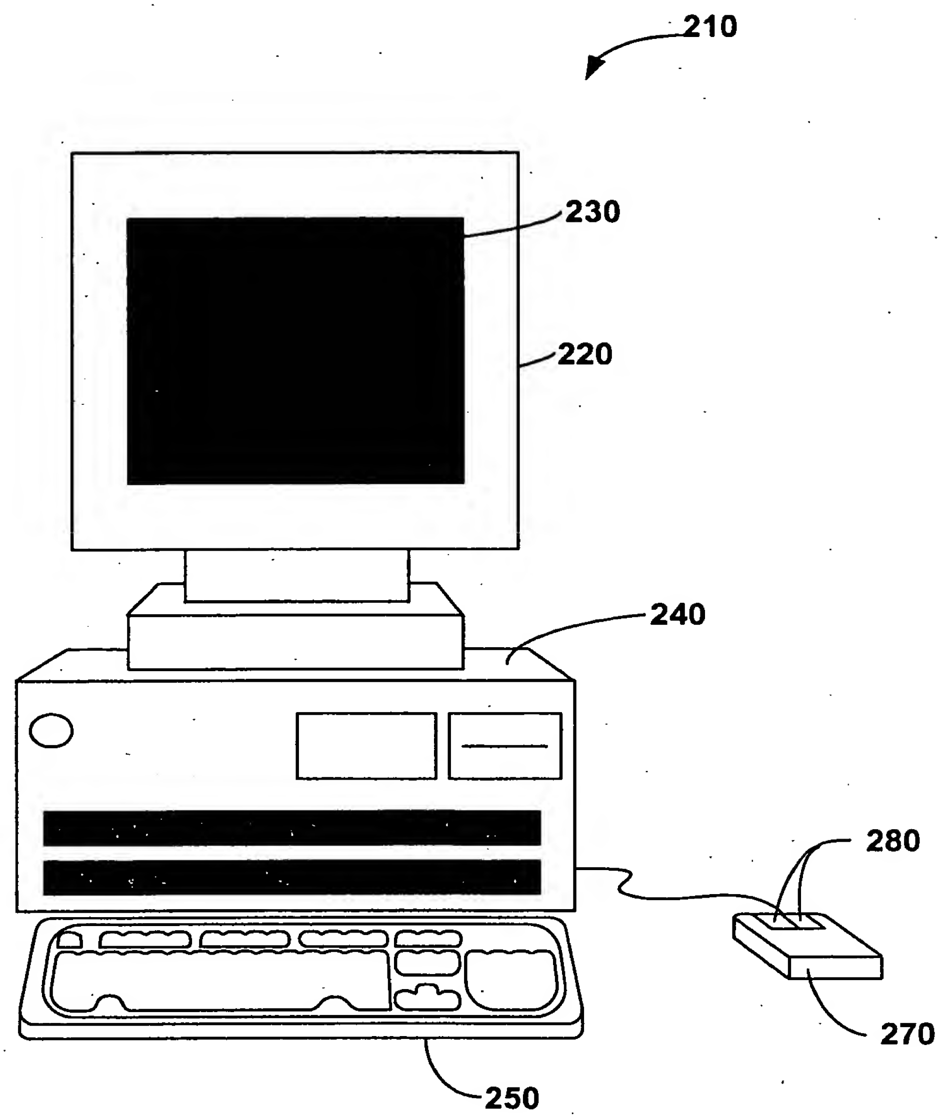

FIG. 2

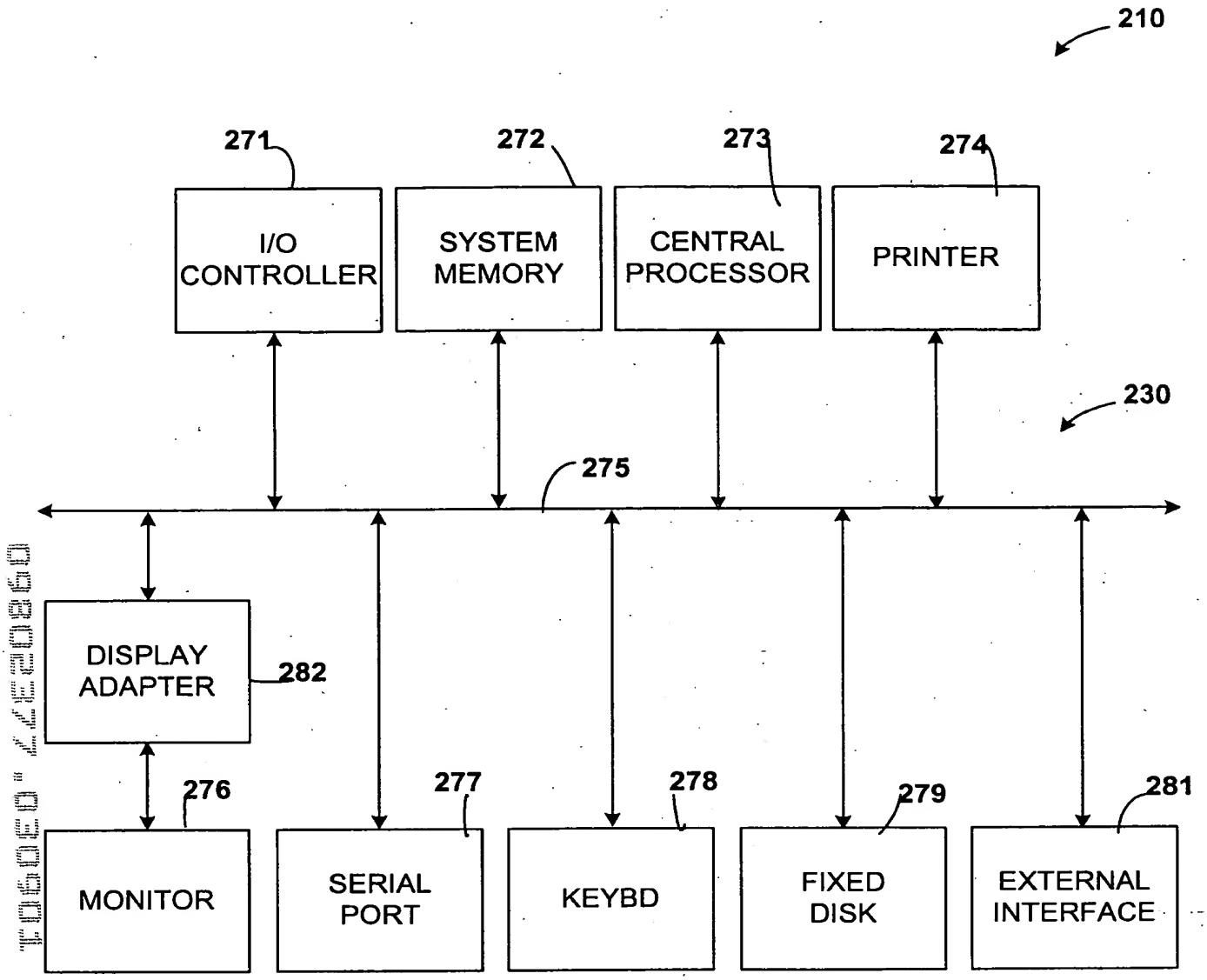
210
271
272
273
274
I/O CONTROLLER
SYSTEM MEMORY
CENTRAL PROCESSOR
PRINTER
230
275
DISPLAY ADAPTER
282
276
277
278
279
281
MONITOR
SERIAL PORT
KEYBD
FIXED DISK
EXTERNAL INTERFACE

FIG. 2A

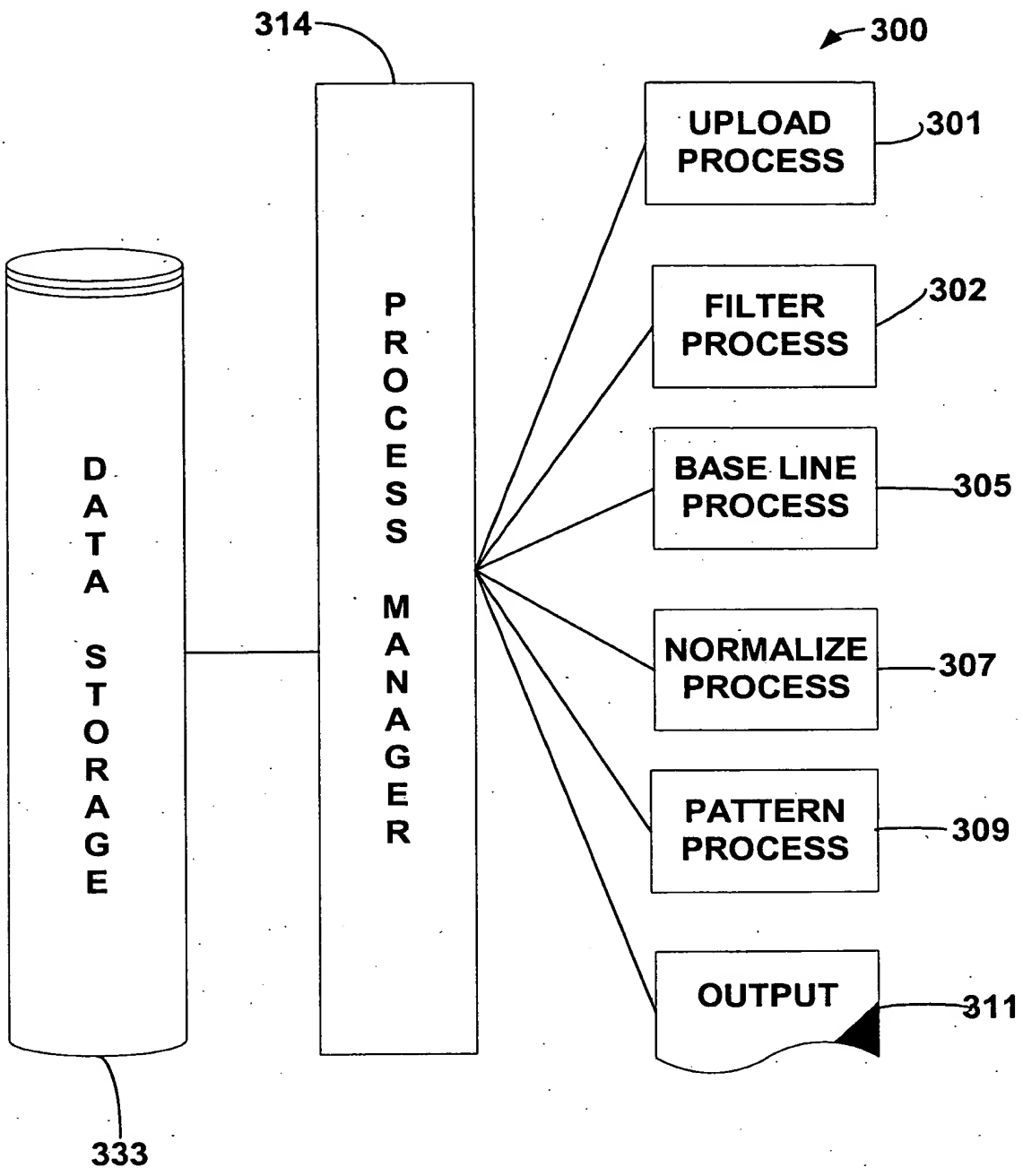
314
300
UPLOAD PROCESS
301
FILTER PROCESS
302
BASE LINE PROCESS
305
NORMALIZE PROCESS
307
PATTERN PROCESS
309
OUTPUT
311
PROCESS MANAGER
DATA STORAGE
333

FIG. 3

FOR OFFICIAL USE ONLY

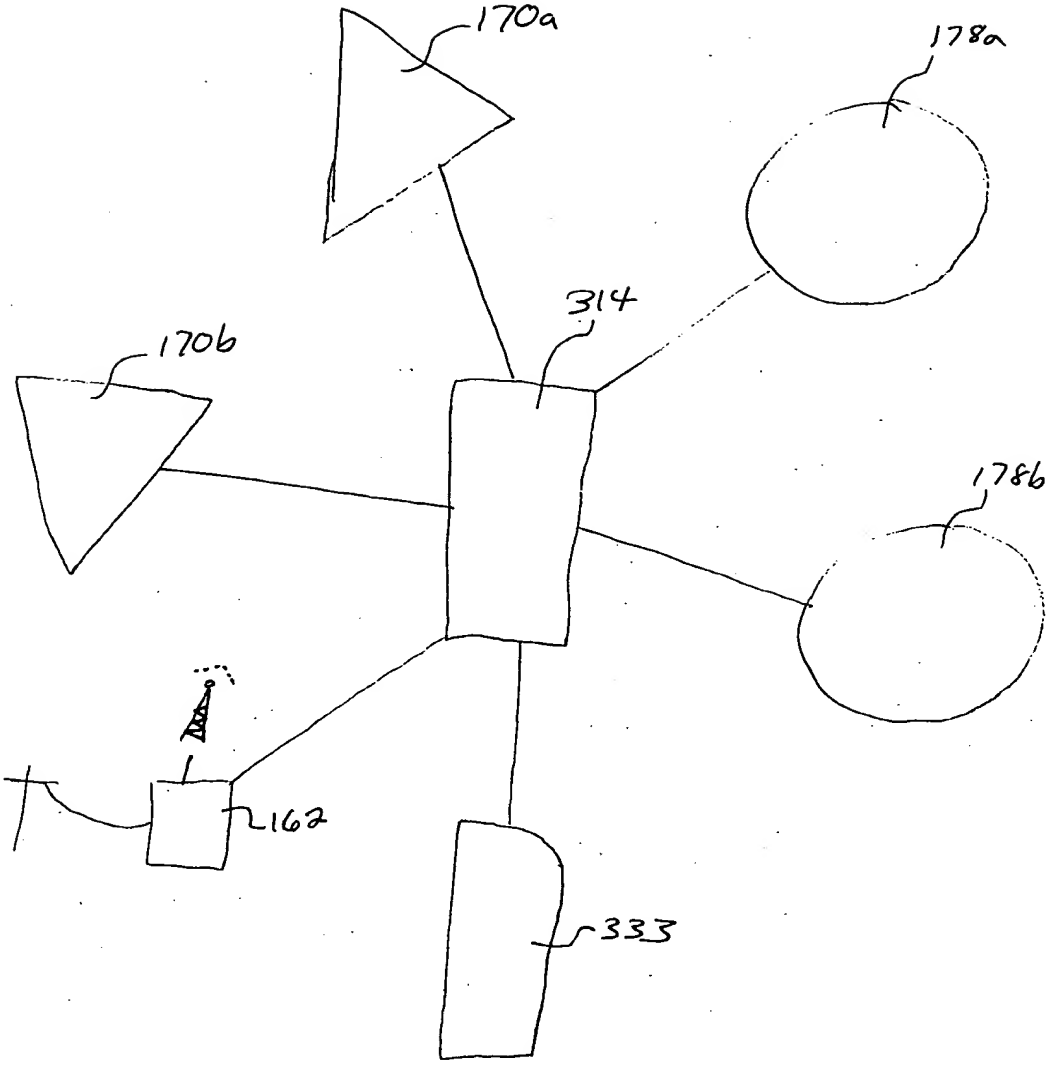

FIG. 3A

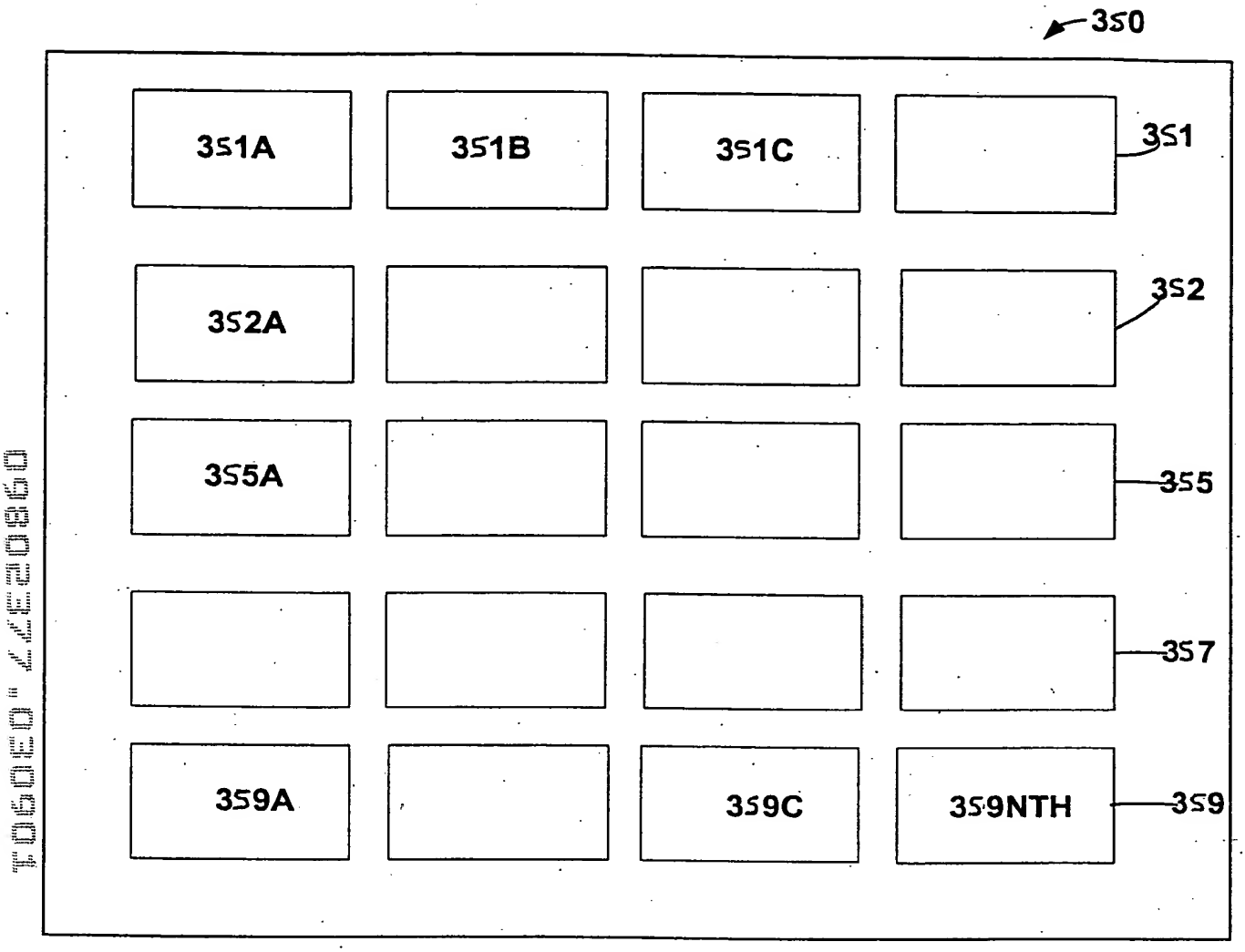
350
351A
351B
351C
351
352A
352
355A
355
357
359A
359C
359NTH
359

FIG. 3B

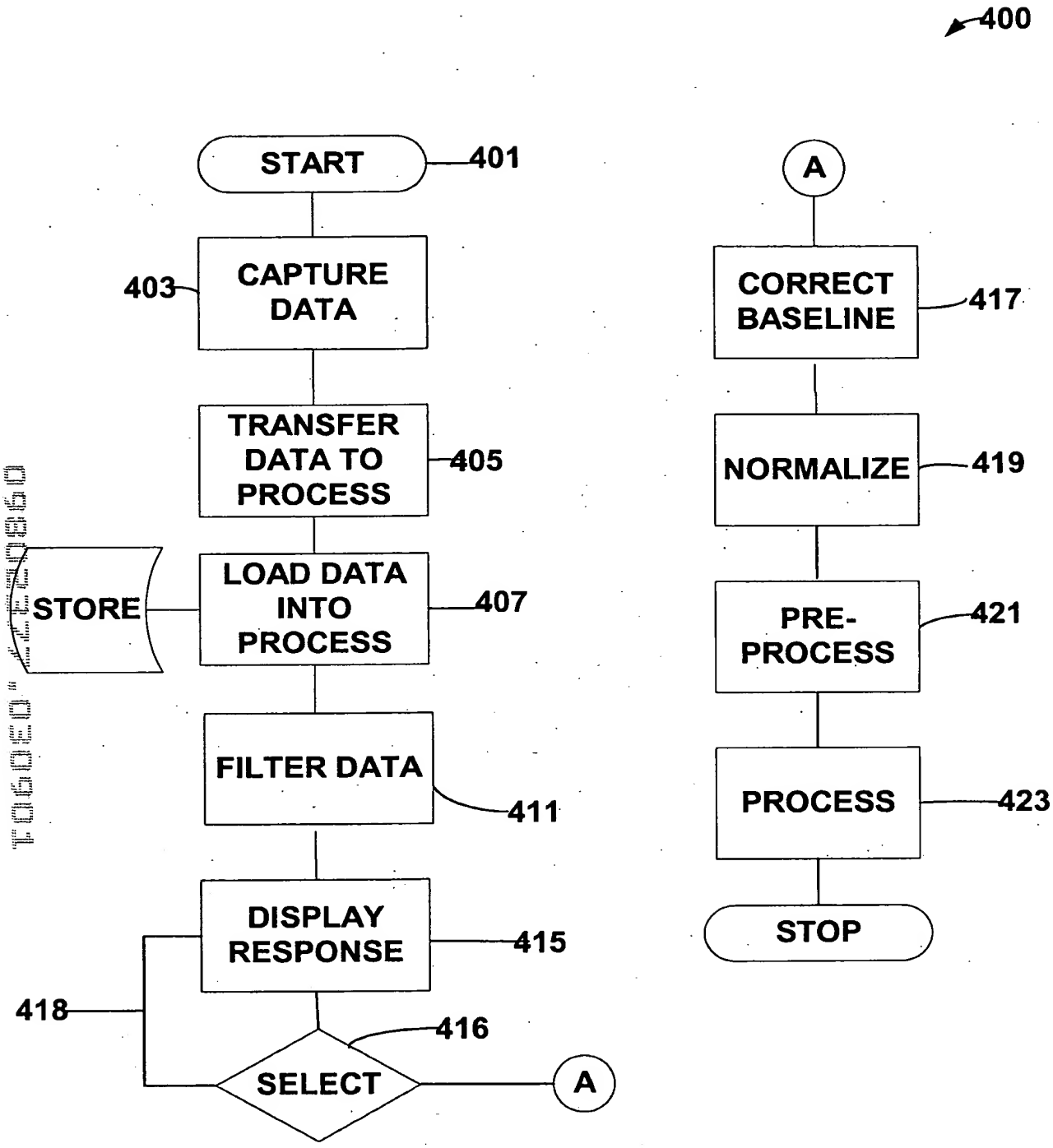
400
START
401
CAPTURE DATA
403
TRANSFER DATA TO PROCESS
405
STORE
LOAD DATA INTO PROCESS
407
FILTER DATA
411
DISPLAY RESPONSE
415
418
416
SELECT
A
A
CORRECT BASELINE
417
NORMALIZE
419
PRE-PROCESS
421
PROCESS
423
STOP

FIG. 4A

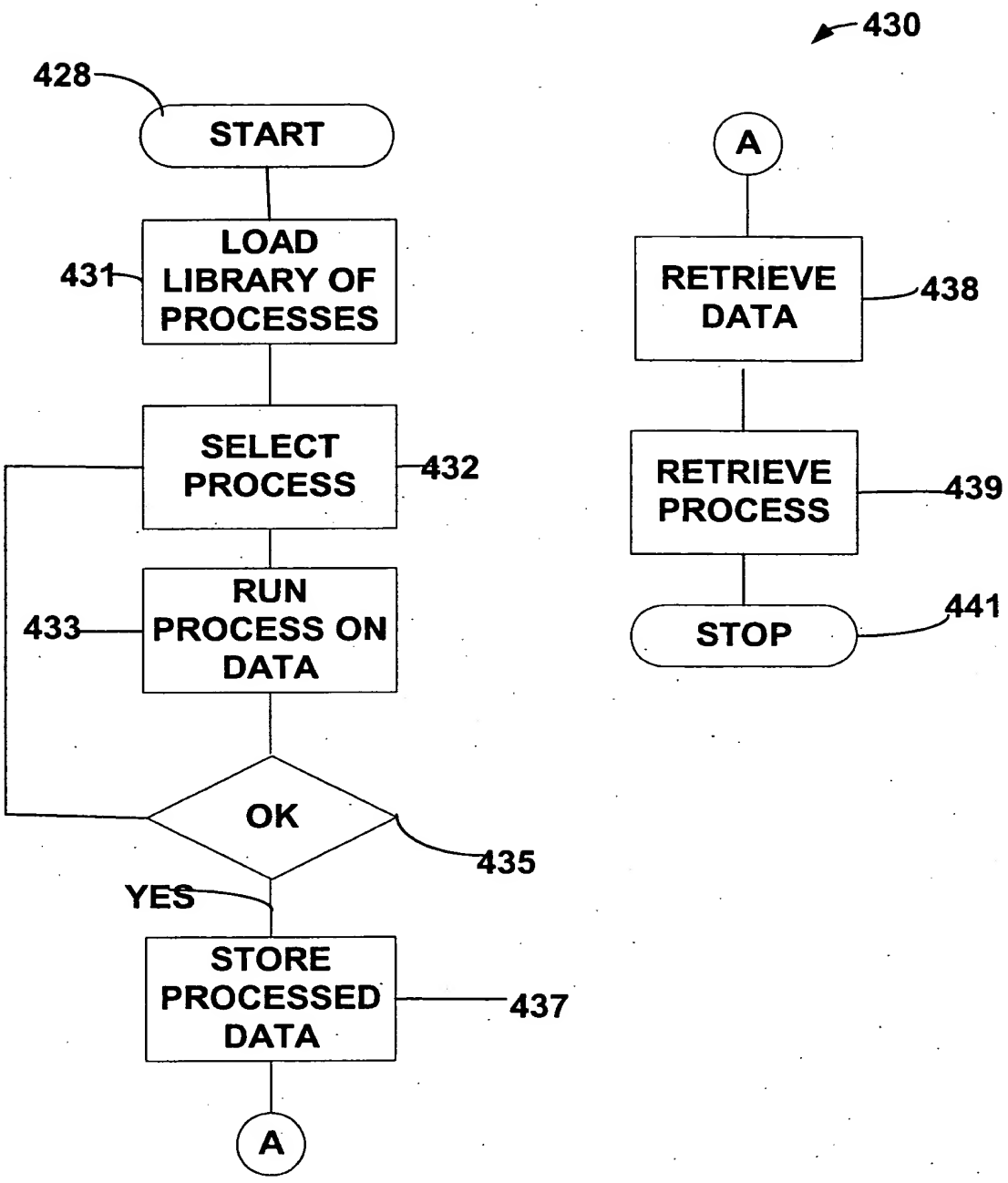
430
428
START
431
LOAD LIBRARY OF PROCESSES
SELECT PROCESS
432
433
RUN PROCESS ON DATA
OK
435
YES
STORE PROCESSED DATA
437
A
A
RETRIEVE DATA
438
RETRIEVE PROCESS
439
STOP
441

FIG. 4B

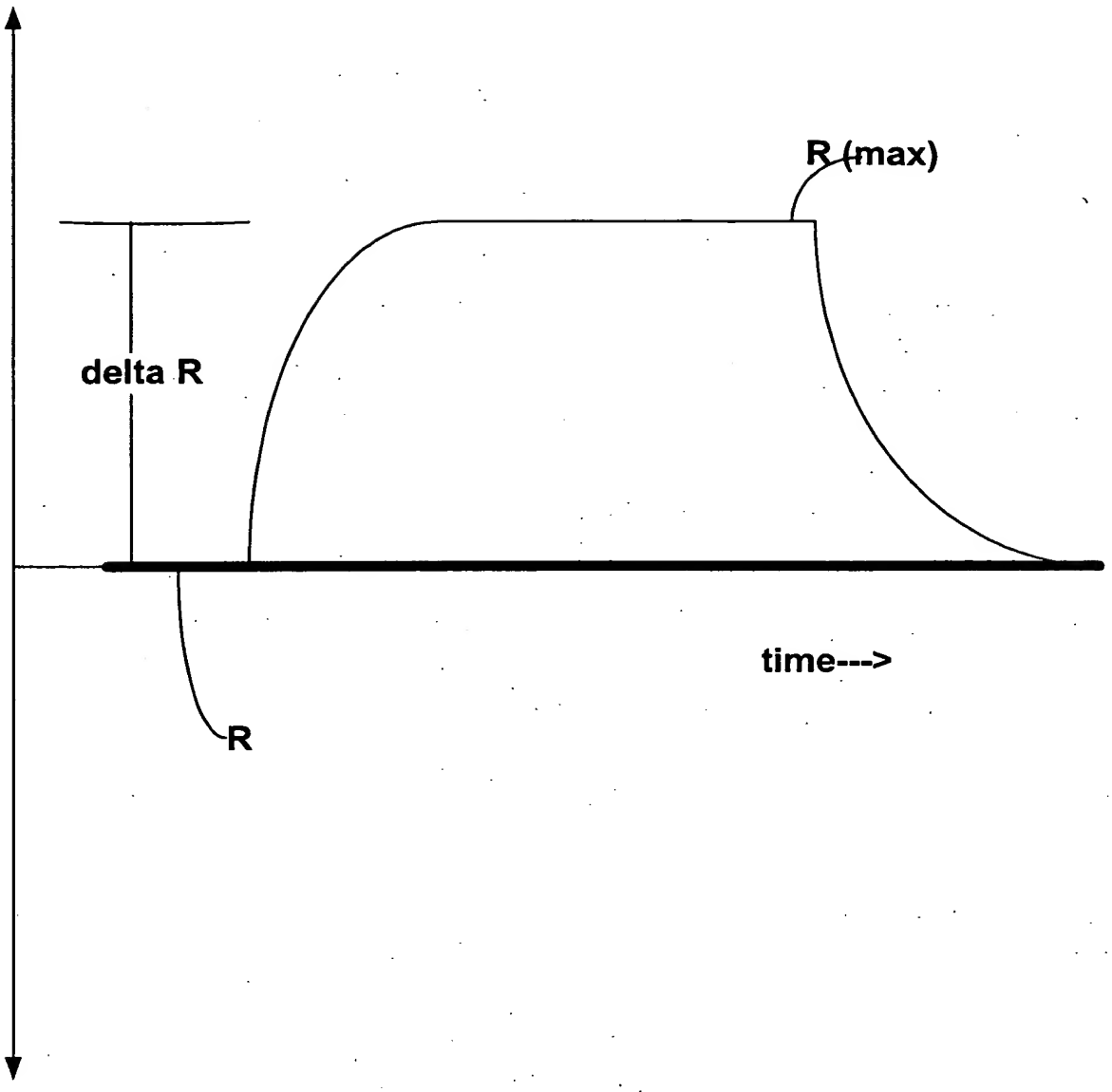

FIG. 4C

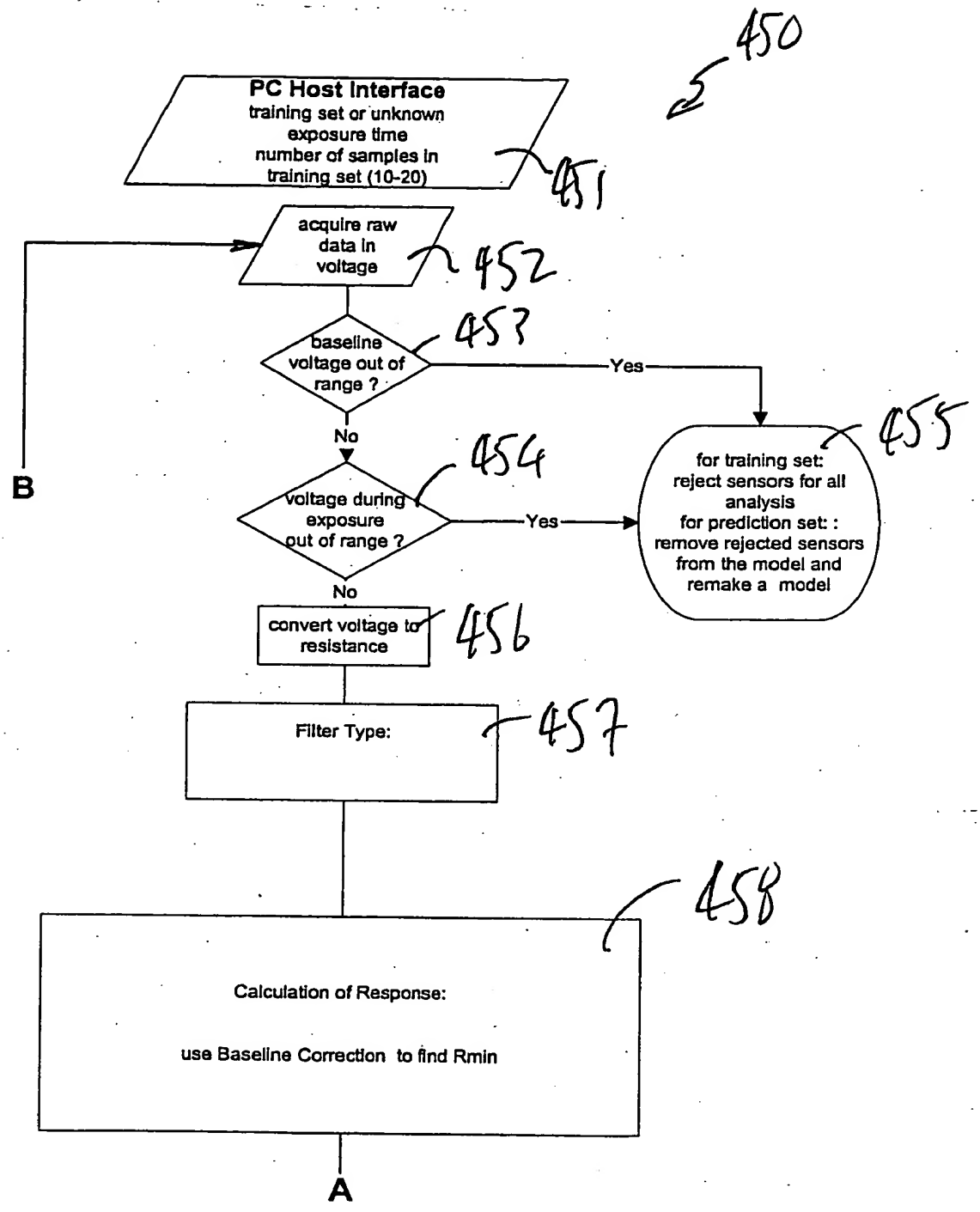
450
PC Host Interface
training set or unknown
exposure time
number of samples in
training set (10-20)
451
acquire raw
data in
voltage
452
baseline
voltage out of
range ?
453
Yes
No
B
voltage during
exposure
out of range ?
454
Yes
for training set:
reject sensors for all
analysis
for prediction set: :
remove rejected sensors
from the model and
remake a model
455
No
convert voltage to
resistance
456
Filter Type:
457
458
Calculation of Response:
use Baseline Correction to find Rmin
A

FIG. 4D

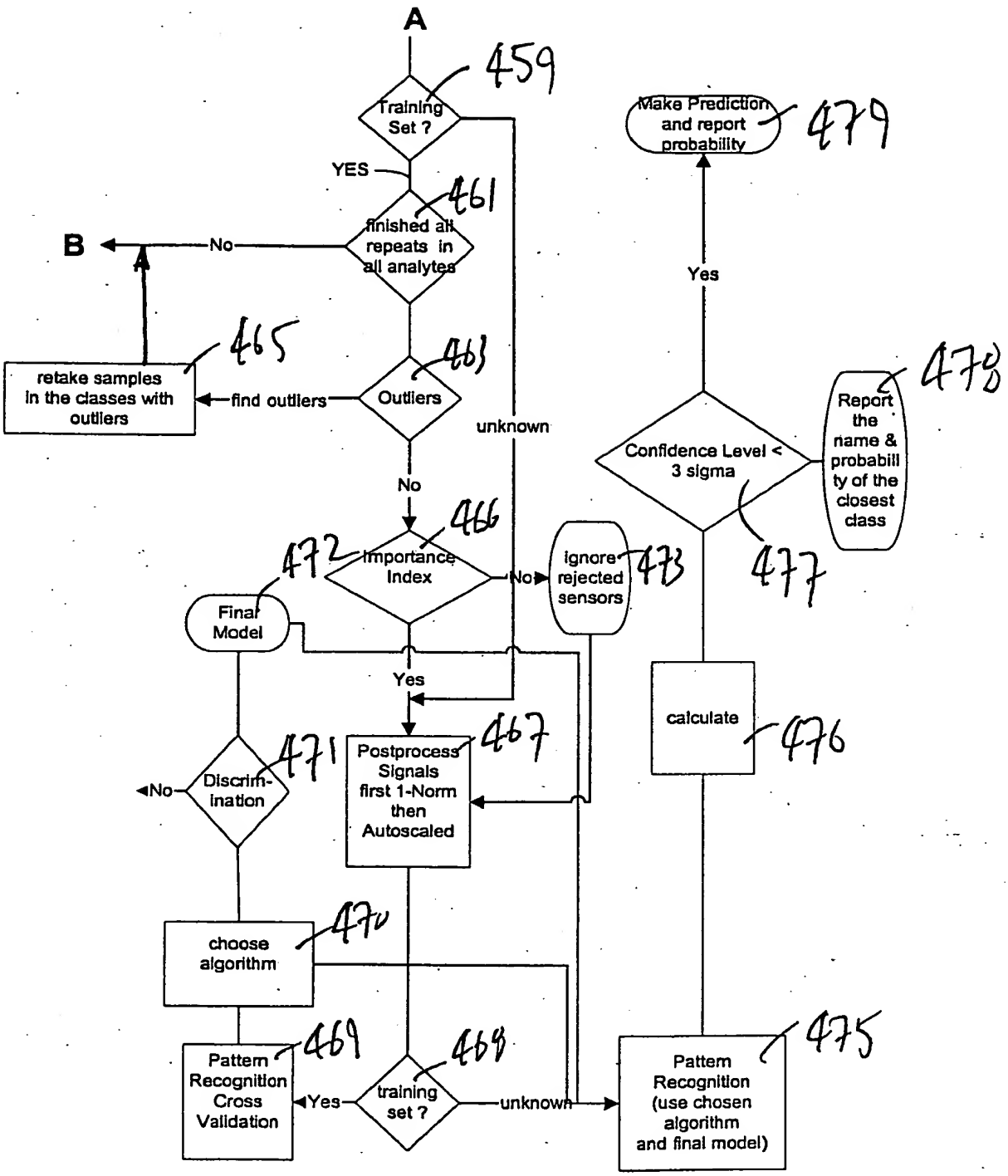
A
459
Training Set ?
YES
461
finished all repeats in all analytes
B
No
465
retake samples in the classes with outliers
find outliers
463
Outliers
unknown
No
466
Importance Index
472
Final Model
No
473
ignore rejected sensors
Yes
467
Postprocess Signals first 1-Norm then Autoscaled
471
Discrim-ination
No
470
choose algorithm
469
Pattern Recognition Cross Validation
Yes
468
training set ?
unknown
475
Pattern Recognition (use chosen algorithm and final model)
calculate
476
Confidence Level < 3 sigma
477
Report the name & probability of the closest class
478
Yes
Make Prediction and report probability
479

FIG. 4E

T060E8464620860

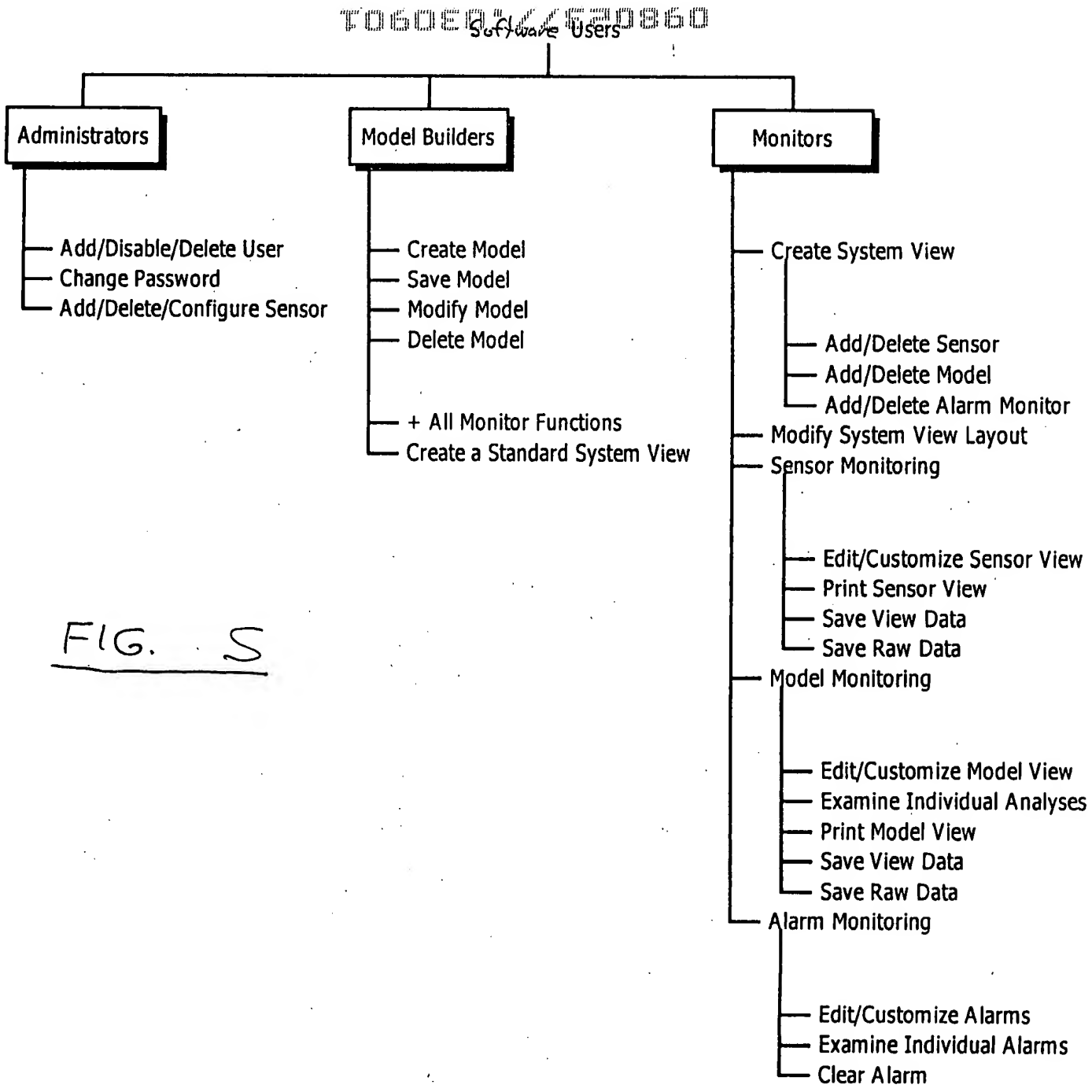

FIG. 5